

a coating supported by a glass substrate, the coating comprising from the glass substrate outwardly:

- a) a dielectric layer;
- b) a layer comprising zinc oxide;
- c) a layer comprising silver;
- d) a layer comprising an oxide of at least one of Ni and Cr;
- e) a dielectric layer;
- f) a layer comprising zinc oxide;
- g) a layer comprising silver;
- h) a layer comprising an oxide of NiCr; and
- i) a dielectric layer.

49. (New) The coated article of claim 48, wherein said dielectric layer a) comprises an oxide of Ti.

### REMARKS

This is in response to the Office Action dated December 17, 2002. Claims 7, 19, 20, 23, 29 and 34-40 have been canceled. New claims 41-49 have been added. Thus, claims 1-6, 8-18, 21-22, 24-28, 30-33 and 41-49 are now pending. Attached hereto is a marked-up version of the changes made to the claim(s) by the current amendment. The attached page(s) is captioned "Version With Markings To Show Changes Made."

Applicant notes with appreciation the Examiner's indication that claims 2, 4, 5, 11-14 and 23 contain allowable subject matter. It is assumed that the Examiner believes claims 1, 20, 29 and 31 also contain allowable subject matter, since these claims were not rejected over any art and are consistent with the reasons for allowance (these claims were only rejected under Section 112 which will be explained below).

In this respect, allowed claim 11 has been rewritten in independent form; claim 17 has been rewritten to include the subject matter of presumably allowed claim 20; claim 21 has been rewritten to include the subject matter of allowed claim 23; claim 27 has been rewritten to include the subject matter of presumably allowed claim 29; and presumably allowed claim 31 has been rewritten in independent form. Thus, according to the Office Action, claims 1-6, 8-18, 21-22, 24-28 and 30-33 now contain allowable subject matter.

Claims 1, 3, 6, 9, 24, 27-32 and 34 stand rejected under 35 U.S.C. Section 112, first paragraph, as allegedly being non-enabled. The Office Action contends that an "IG unit is critical or essential to the practice of the invention, but is not included in the claims." This Section 112 rejection is respectfully traversed for at least the following reasons. Nothing in the instant application states that an IG unit is critical or essential to the inventions of these claims. Instead, the application states the exact opposite. For example, the instant specification explains that certain embodiments of this invention may be used in IG units, vehicle windows, skylights, glass doors, and the like (e.g., pg. 4, ¶ 0015). The inventions of these claims clearly are not limited to IG units, and IG units are not critical or essential as emphasized by the instant specification. Moreover, it is

noted that a coating's sheet resistance is the same whether it is used in an IG unit, vehicle window, skylight, etc. Whether a coated article is used in an IG unit is irrelevant with respect to sheet resistance. This is emphasized by the fact that coated articles in the instant specification are said to have certain sheet resistances even though they are not said to be in IG units (e.g., pgs. 3-4, ¶¶ 0008-0009). This Section 112 rejection is improper and should be withdrawn.

Claims 9, 15-18 and 24-26 stand rejected under 35 U.S.C. Section 112, first paragraph as being allegedly non-enabled. This Section 112 rejection is respectfully traversed. Nothing in the instant specification states that "all antireflective layers, upper and lower buffer layers, infrared reflective layers and overcoat layer, is critical or essential to obtaining the claimed properties." Many different embodiments of the instant invention may be used to obtain these properties. Certain layers may be omitted/added, and/or material(s) changed, without departing from the claimed properties. Clearly, there is no requirement that applicant incorporate the specification into the claims, as this would be contrary to the very fundamentals of patent law. Instead, 35 U.S.C. Section 112 states that the "best mode" of the invention is to be set forth in the specification – not in the claims. There is a clear recognition by the statute that the best mode need not be set forth in the claims. Again, this Section 112 rejection is incorrect and should be withdrawn.

Claims 17-18 stand rejected under 35 U.S.C. Section 112, second paragraph. The Office Action contends that the "applicant is required to set forth specific compositions for the coating layers." This Section 112 rejection is respectfully traversed. The claims,

**LAIRD**

Serial No. **09/978,184**

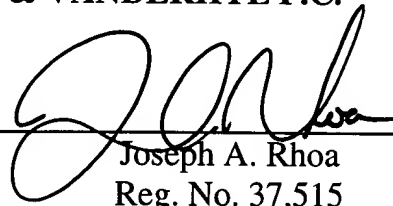
not the specification, define the claimed inventions. There is no requirement in patent law that a claimed layer must have a material for that layer recited in the claim. Instead, the statute actually teaches to the contrary. As explained above, 35 U.S.C. Section 112 states that the "best mode" of the invention is to be set forth in the specification – not in the claims. There is a clear recognition by the statute that the best mode need not be set forth in the claims. Again, this Section 112 rejection is incorrect and should be withdrawn.

For at least the foregoing reasons, it is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS**

Please cancel claims 7, 19, 20, 23, 29 and 34-40.

1. (Unamended) A coated article comprising:

a coating or layer system supported by a glass substrate, the coating or layer system comprising from the glass substrate outwardly:

- a) a titanium oxide inclusive layer;
- b) a zinc oxide inclusive contact layer;
- c) a silver inclusive layer contacting the zinc oxide inclusive layer b);
- d) a nickel chrome oxide inclusive layer contacting the silver inclusive layer c);
- e) a tin oxide inclusive layer;
- f) a zinc oxide inclusive layer;
- g) a silver inclusive layer;
- h) a nickel chrome oxide inclusive layer; and
- i) a silicon nitride inclusive layer;

wherein the coated article has a visible transmission of at least about 70% and the coating or layer system has a sheet resistance ( $R_s$ ) of no greater than 5.0 ohms/square; and

wherein the coated article is not tempered or heat bent.

8. (Amended) The coated article of claim [7]11, wherein the lower contact layer comprises zinc aluminum oxide.

9. (Amended) The coated article of claim [7]11, wherein the coated article has a visible transmission of at least 70% and a sheet resistance ( $R_s$ ) of no greater than 5.0 ohms/square.

10. (Amended) The coated article of claim [7]11, wherein the coated article comprises an insulating glass (IG) window unit.

11. (Amended) A non-heat-treated coated article comprising:  
a substrate;  
a first dielectric layer supported by the substrate;  
a lower contact layer comprising zinc oxide;  
an infrared (IR) reflecting layer comprising silver contacting the lower contact layer comprising zinc oxide;  
an upper contact layer comprising at least one of an oxide of nickel, an oxide of chromium, and nickel chrome oxide which contacts the IR reflecting layer comprising silver;  
wherein the IR reflecting layer comprising silver is located between and in contact with the lower and upper contact layers;  
wherein the coated article is not heat treated;

[The coated article of claim 7, further comprising ]a second dielectric layer provided over top of and in contact with the upper contact layer;

another lower contact layer comprising zinc oxide;

another infrared (IR) reflecting layer comprising silver which contacts the another lower contact layer;

another upper contact layer comprising nickel chrome oxide, the another IR reflecting layer being sandwiched between and contacting the another lower contact layer and the another upper contact layer; and

a third dielectric layer provided over top of and in contact with the another upper contact layer.

15. (Amended) The coated article of claim [7]11, wherein the coated article comprises an IG window unit and has the following characteristics:

$a^*_t$ (transmissive):	-5.0 to 0.0
$b^*_t$ (transmissive):	-2.0 to 4.0
$R_g Y$ (outside reflectance):	7 to 13%
$a^*_g$ (outside reflective):	-3.0 to 2.0
$b^*_g$ (outside reflective):	-5.0 to 1.0
SHGC:	$\leq 0.45$
SC:	$\leq 0.49$
$T_{\text{ultraviolet}}$ :	$\leq 0.36$ .

17. (Amended) An insulating glass (IG) window unit comprising:

first and second substrates spaced from one another,

a coating supported by the first substrate, the coating including first and second IR reflecting layers, each of the IR reflecting layers being sandwiched between and contacting a respective pair of contact layers;

wherein the coating has a sheet resistance ( $R_s$ ) no greater than 3.5 ohms/square;

[and]

wherein the IG window unit has a visible transmission of at least 70%, a solar heat gain coefficient (SHGC) no greater than 0.45, and outside reflective color characterized by  $a^*_{\text{outside reflective}}$  from -3.0 to 2.0 and  $b^*_{\text{outside reflective}}$  from -5.0 to 1.0[.];

wherein the pair of contact layers sandwiching the first IR reflecting layer therebetween includes a lower contact layer and an upper contact layer, and wherein the first IR reflecting layer includes Ag, wherein the lower contact layer comprises zinc aluminum oxide and is located between the first IR reflecting layer and the substrate, and the upper contact layer comprises an oxide of NiCr.

21. (Amended) A non-heat-treated coated article comprising:

a coating supported by a glass substrate, the coating comprising an infrared (IR) reflecting layer sandwiched between and contacting first and second contact layers; and

wherein the first contact layer includes zinc oxide and the second contact layer comprises [at least one of nickel oxide, chromium oxide, and ]nickel-chrome oxide.



27. (Amended) A coated article comprising:

a coating or layer system supported by a glass substrate, the coating or layer system comprising from the glass substrate outwardly:

- a) a dielectric layer(s);
- b) a zinc oxide inclusive contact layer;
- c) a silver inclusive layer contacting the zinc oxide inclusive layer b);
- d) a contact layer including at least one of nickel oxide and chrome oxide

that is located over and contacts the silver inclusive layer c);

- e) a dielectric layer(s);
- f) a zinc oxide inclusive contact layer;
- g) a silver inclusive layer;
- h) a contact layer; and
- i) a dielectric layer(s);

wherein the coated article has a visible transmission of at least about 70% and the coating or layer system has a sheet resistance ( $R_s$ ) no greater than 5.0 ohms/square; [and]

wherein the coated article is not thermally tempered or heat bent[.]; and

wherein the e) dielectric layer(s) comprises tin oxide, and wherein the contact layer d) comprises an oxide of NiCr.

31. (Amended) A coated article comprising:

a coating or layer system supported by a glass substrate, the coating or layer system comprising from the glass substrate outwardly:

a) a dielectric layer(s);

b) a zinc oxide inclusive contact layer;

c) a silver inclusive layer contacting the zinc oxide inclusive layer b);

d) a contact layer including at least one of nickel oxide and chrome oxide  
that is located over and contacts the silver inclusive layer c);

e) a dielectric layer(s);

f) a zinc oxide inclusive contact layer;

g) a silver inclusive layer;

h) a contact layer; and

i) a dielectric layer(s);

wherein the coated article has a visible transmission of at least about 70% and the  
coating or layer system has a sheet resistance ( $R_s$ ) no greater than 5.0 ohms/square; [and]

wherein the coated article is not thermally tempered or heat bent; and

[The coated article of claim 27, ]wherein the contact layers d) and h) each  
comprise[s  $\text{NiCrO}_x$ .] an oxide of NiCr.

Please add the following new claims:

41. (New) A coated article comprising:

a coating supported by a glass substrate, the coating comprising from the glass  
substrate outwardly:

a) a layer comprising an oxide of titanium;

- b) a layer comprising zinc oxide;
- c) a layer comprising silver;
- d) a layer comprising an oxide of nickel chrome;
- e) a dielectric layer;
- f) a layer comprising zinc oxide;
- g) a layer comprising silver;
- h) a contact layer; and
- i) a dielectric layer.

42. (New) The coated article of claim 41, wherein the coated article has a visible transmission of at least about 70% and the coating or layer system has a sheet resistance ( $R_s$ ) of no greater than 5.0 ohms/square.

43. (New) The coated article of claim 41, wherein said contact layer h) comprises an oxide of NiCr.

44. (New) The coated article of claim 41, wherein at least one of the layers b) and g) comprising zinc aluminum oxide.

45. (New) The coated article of claim 41, wherein the dielectric layer e) comprises tin oxide.

46. (New) The coated article of claim 41, wherein the dielectric layer i) comprises at least one of tin oxide and silicon nitride.

47. (New) The coated article of claim 41, wherein the coated article is part of an IG window unit.

48. (New) A coated article comprising:  
a coating supported by a glass substrate, the coating comprising from the glass substrate outwardly:

- a) a dielectric layer;
- b) a layer comprising zinc oxide;
- c) a layer comprising silver;
- d) a layer comprising an oxide of at least one of Ni and Cr;
- e) a dielectric layer;
- f) a layer comprising zinc oxide;
- g) a layer comprising silver;
- h) a layer comprising an oxide of NiCr; and
- i) a dielectric layer.

49. (New) The coated article of claim 48, wherein said dielectric layer a) comprises an oxide of Ti.